**Evaluate Numerical Expressions** Numerical expressions often contain more than one operation. To evaluate them, use the rules for order of operations shown below.

**18**.

**17**.

**16**.

**14**.

=

=

=

=

**b**.

**Step 1** Evaluate expressions inside grouping symbols.

**Step 2** Evaluate all powers.

**Step 3** Do all multiplication and/or division from left to right.

**Step 4** Do all addition and/or subtraction from left to right.

**Order of**

**Operations**

**Lesson 1-2**

*Glencoe Algebra 1*

Chapter 1

**11**

**15**. 250 ÷ [5(3 ․ 7 + 4)]

**13**. 32 ÷ 3 + 22 ․ 7 - 20 ÷ 5

**10**. 15 - 12 ÷ 4

**12**. 24 ÷ 3 ․ 2 - 32

**11**. 12(20 - 17) - 3 ․ 6

**9**. 10 + 8 ․ 1

**8**. (12 + 4) ․ 6

**7**. (8 - 4) ․ 2

**6**. 28

**5**. 83

**4**. 122

**3**. 104

**2**. 33

**1**. 52

**Exercises**

**Evaluate each expression.**

Multiply.

Evaluate power in denominator.

Add 3 and 8 in the numerator.

Evaluate power in numerator.

Use 6 as a factor 3 times.

Multiply.

**b**. **63**

63 = 6 ․ 6 ․ 6

= 216

Add 2 and 16.

Multiply 3 and 18.

= 3(18)

= 54

Use 3 as a factor 4 times.

Multiply.

**34**

34 = 3 ․ 3 ․ 3 ․ 3

= 81

**a.**

**3[2 + (12 ÷ 3)2]**

3[2 + (12 ÷ 3)2] = 3(2 + 42) Divide 12 by 3.

= 3(2 + 16) Find 4 squared.

**a.**

**Evaluate each expression.**

**Example 2**

**Evaluate each expression.**

**Example 1**

**Study Guide and Intervention**

***Order of Operations***

**1-2**

NAME DATE PERIOD







**15**.

**Evaluate Algebraic Expressions** Algebraic expressions may contain more than one operation. Algebraic expressions can be evaluated if the values of the variables are known. First, replace the variables with their values. Then use the order of operations to calculate the value of the resulting numerical expression.

**21**.

**19**. +

**17**.

**20**.

**16**.

**13**.

**11**.

**7**.

**Exercises**

**Evaluate each expression if *x* = 2, *y* = 3, *z* = 4, *a* = , and *b* = .**

**3**. *x* + *y*2

**Study Guide and Intervention** *(continued)*

***Order of Operations***

*Glencoe Algebra 1*

Chapter 1

**12**

**18**. (*z* ÷ *x*)2 + *ax*

**14**. 6*xz* + 5*xy*

**12**. *a*2 + 2*b*

**10**. (10*x*)2 + 100*a*

**9**. *x*(2*y* + 3*z*)

**8**. 2*xyz* + 5

**6**. 23 – (*a* + *b*)

**5**. 6*a* + 8*b*

**4**. *x*3 + *y* + *z*2

**2**. 3*x* – 5

**1**. *x* + 7

The solution is 53.

Replace *x* with 2 and *y* with 12.

Evaluate 23. Subtract 3 from 12. Multiply 5 and 9. Add 8 and 45.

= 23 + 5(12 – 3)

= 8 + 5(12 – 3)

= 8 + 5(9)

= 8 + 45

= 53

**Evaluate *x*3 + 5( *y* – 3) if *x* = 2 and *y* = 12.**

**Example**

*x*3 + 5( *y* – 3)

**1-2**

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